REMARKS

New Claims 31 and 32 are pending in this application with claims 1-30 cancelled either previously or herein. No new matter is added by the introduction of these new claims. Claim 31 includes the features of previously presented claim 1, and claim 32 includes the features of previously presented claim 28. Support for the claims can be found at least in these previous claims and in the specification at page 19, line 21 to page 20 line 14, page 25 lines 3-5, and page 28 lines 13-15.

The Examiner is thanked for acknowledging the priority claim and the receipt of all certified copies of the priority documents for this application, and for indicating acceptance of the drawings.

Claims 1, 2 and 28 are rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 4,630,304 to Borth et al. in view of U.S. Patent No. 6,385,548 to Anathaiyer. Claim 29 is rejected under 35 U.S.C. § 103(a) as unpatentable over Borth in view of Anathaiyer and in further view of U.S. Published Patent Application No. 2003/0198304 to Sugar. Claim 30 is rejected under 35 U.S.C. § 103(a) as unpatentable over Borth in view of Sugar. As claims 1-30 have been cancelled herein, it is submitted that these rejections are now rendered moot.

Nonetheless, because claims 31 and 32 recite some similar elements as the preceding cancelled claims, the distinctions between these claims and the cited prior art references are discussed below.

With respect to claim 31, the voice activity detector of claim 31 includes a flatness evaluator for calculating a speech flatness factor indicating flatness of the speech frequency spectrum and calculating a voice/noise flatness factor indicating flatness of the voice/noise frequency spectrum. Specifically, claim 31 recites:

(a) wherein, when the speech frequency spectrum is chosen for calculating the speech flatness factor, the flatness evaluator finds a maximum value of the speech frequency spectrum, adds up differences between spectral components and the maximum value thereof, and generates resulting sum of the differences as the speech flatness factor;

(b) wherein, when the voice/noise frequency spectrum is chosen for calculating the voice/noise flatness factor, the flatness evaluator finds a maximum value of the voice/noise frequency spectrum, adds up differences between spectral components and the maximum value thereof, and generates resulting sum of the differences as the voice/noise flatness factor, and

wherein the flatness evaluator calculates an average of spectral components of the voice/noise data, normalizes the resulting sum of the differences by dividing by the calculated average, and outputs a normalized voice/noise flatness factor.

Further, the voice activity detector of claim 31 includes a voice/noise discriminator for:

(a1) determining whether the speech data contains a talkspurt, by comparing the speech flatness factor of the speech frequency spectrum with a first predetermined threshold,

(b1) determining whether the voice/noise data contains a talkspurt, by comparing the normalized voice/noise flatness factor of the voice/noise frequency spectrum with a second predetermined threshold.

It is respectfully submitted that neither Borth nor Ananthaiyer teach a voice activity detection of claim 31 as shown above, whether used alone or in combination.

With respect to claim 32, the voice activity detector of claim 32 includes a flatness evaluator for calculating a speech flatness factor indicating flatness of the speech frequency spectrum and calculating a voice/noise flatness factor indicating flatness of the voice/noise frequency spectrum.

Specifically, claim 32 recites:

> "(a) wherein, when the speech frequency spectrum is chosen for calculating the speech flatness factor,
>
> the flatness evaluator that adds up differences between adjacent spectral components of the speech data and generates resulting sum of the differences as the speech flatness factor;
>
> (b) wherein, when the voice/noise frequency spectrum is chosen for calculating the voice/noise flatness factor,
>
> the flatness evaluator that adds up differences between adjacent spectral components of the voice/noise data and generates resulting sum of the differences as the voice/noise flatness factor, and
>
> wherein said flatness evaluator calculates an average of spectral components of the voice/noise data, normalizes the resulting sum of the differences by dividing-by the calculated average, and outputs a normalized voice/noise flatness factor.

Further, the voice activity detector of claim 32 includes a voice/noise discriminator for:

> "(a1) determining whether the speech data contains a talkspurt, by comparing the speech flatness factor of the speech frequency spectrum with a first predetermined threshold,
>
> (b1) determining whether the voice/noise data contains a talkspurt, by comparing the normalized voice/noise flatness factor of the voice/noise frequency spectrum with a second predetermined threshold.

It is respectfully submitted that neither Borth nor Ananthaiyer teach the voice activity detection features of claim 32 as shown above, whether used alone or in combination.

It is further submitted that the shortcomings of Borth and Ananthaiyer are not addressed by the relied upon portions of Sugar.

Accordingly it submitted that claims 31 and 32 are allowable, which action is earnestly solicited.

IN CONCLUSION

In view of the remarks set forth above, this application is in condition for allowance which action is respectfully requested. However, if for any reason the Examiner should

consider this application not to be in condition for allowance, the Examiner is respectfully requested to telephone the undersigned attorney at the number listed below prior to issuing a further Action.

Any fee due with this paper may be charged to Deposit Account No. 50-1290.

Respectfully submitted,

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